



Intermontanus

Published by the Utah Association of Herpetologists

Volume 4

May 1995

Number 3

NEWS & ANNOUNCEMENTS

UTAH NOW ON-LINE

The Utah Association of Herpetologists now has an e-mail address (Utahherps@aol.com). Feel free to contact UtAH or to submit articles, notes etc. for the newsletter via e-mail.

SPECIAL GUEST SPEAKERS AT UTAH MEETINGS

UtAH is pleased to announce that the next two meetings will feature special guest speakers. On 1 June 1995 Dr. Oscar Flores Villela will talk about the biogeography and conservation of Mexican herpetofauna. Dr. Flores Villela is visiting Utah from the Facultad de Ciencias, Museo de Zoología, Universidad Nacional Autónoma México.

On 6 July 1995 Dr. Miriam Benabib will present a talk on the ecology and life history of *Sceloporus variabilis*. Dr. Benabib is also visiting Utah from México.

These are our first speakers from outside Utah and our first international speakers. Both lectures will offer great insights into the Mexican herpetofauna. Please show your support by attending these two meetings.

REGIONAL HERP SOCIETY CONFERENCE AT SSAR MEETING

The annual meeting of the Society for the Study of Amphibians and Reptiles will take place this year from 8-13 August at Appalachian State University in Boone, North Carolina.

One component of the meeting this year will be a special "Regional Herpetological Society Conference," scheduled to take place on Thursday, 10 August, from 8:45 AM to 3:00 PM. The conference is designed to bring together individuals who are members of, officers in, or advisors to regional herp societies, and share information about programs, activities, and methods of achieving their goals.

The program for this conference appears below. Anyone who is interested in the functioning and growth of their herp society is encouraged to attend the conference. Information about the SSAR meeting and registration material may be obtained by contacting Breck Bartholomew at 801-752-0297 or Utahherps@aol.com.

Program for Regional Herpetological Society Conference

Producing a High Quality Regional Herpetological Society Newsletter, With or Without a Computer, by Jeffrey C. Beane (North Carolina Herpetological Society) and Breck Bartholomew (Utah Association of Herpetologists).

Mid-Ohio Herpetological Society's "Counselor's Corner," by Scott Highley (Mid-Ohio Herpetological Society).

Public Involvement in the Protection of Endangered Reptiles in Ontario, by Bob Johnson (Metropolitan Toronto Zoo), David Martin (Upper Thames River Conservation Authority), and B. Porchuk (Dept. of Zoology, University of Guelph).

Tax-exempt Status for Herpetological Societies: Is It Worth the Hassle? By Mark A. Kikta, Esq. (Northern Ohio Association of Herpetologists).

Contributions Which Nonacademic Herpetologists Can Make to the Scientific Study of Declining Amphibian Populations, by Scott Moody (Southeastern Ohio Society of Herpetologists and Ohio University).

Regional Herpetological Societies and the Science Olympiad, by George Renwick (Newberry College) and Martin J. Rosenberg (NOAH).

Marketing Herpetology, by Jack Schoenfelder (Chicago Herpetological Society).

North Carolina Herpetological Society: Educational and Research Endeavors, by Ann B. Somers (North Carolina Herpetological Society).

Educational Programs of the Long Island Herpetological Society, by Peter R. Warny, Jr. (Long Island Herpetological Society).

19TH INTERNATIONAL HERPETOLOGICAL SYMPOSIUM

The International Herpetological Symposium's 19th annual meeting will be held in Denver, Colorado on 14-17 June 1995. This year's meeting will feature:

Panel discussion and debate: Are Captive Born Reptiles Suitable for Release?

Workshops: Veterinary...Legislative...Husbandry

Audio-Visual Slide Presentation: Herps of the West...Amphibians of Appalachia

Keynote address by Russell Mittermeyer: Herpetological Conservation—A Global Perspective

For more information contact David Hulmes, 361 Van Winkle Avenue, Hawthorne, NJ 07506, phone (201) 427-0768.

SECOND INTERNATIONAL CONFERENCE ON THE BIOLOGY AND CONSERVATION OF SOUTH ASIAN AMPHIBIAN AND REPTILES

The Amphibian and Reptile Research Organization of Sri Lanka and the IUCN/SSC South Asian Reptile and Amphibian Group have announced plans to hold the Second International Conference on the Biology and Conservation of South Asian Amphibian and Reptiles in April 1996. The theme of the conference will be "the biology and conservation of South Asian herpetofauna." For more information contact Anslem de Silva, Faculty of Medicine, University of Peradeniya, Sri Lanka.

Eric Peterson & Gina Gordon

invite all UtAH members to attend their wedding reception.

3 June 1995 at 6:30

340 East 60 North

London, Utah

If the weather does not cooperate the reception will held at 1485 North 800 West in Orem, Utah.

Errata: The herp song in *Intermontanus* 4(2) should have been credited to Mason Williams instead of Billy Kent Lowe. Mason Williams wrote the song as a poem which was published in his book *The Mason Williams Reading Matter* in 1964. Mason Williams or some other artist recorded it as a song in the 60's.

NEW PUBLICATIONS

► The Smithsonian Herpetological Information Service recently published six papers. The SHIS series publishes and distributes translations, bibliographies, indices, and similar items judged useful to individuals interested in the biology of amphibians and reptiles, but unlikely to be published in the normal technical journals. The titles of the most recent papers are:

- *On the distribution of certain South American Turtles (Testudines: Testudinidae & Chelidae)*
- *Checklist and bibliography of the amphibians and reptiles of Panama*
- *Bibliography and scientific name index to amphibian and reptiles published in the Caribbean Journal of Science Volumes 1-25, 1961-1989*
- *A Trilogy on the Herpetology of Linnaeus's Systema Naturae X*
- *Herpetological Publications of the National Museum of Natural History (USNM), 1853-1994*
- *Bibliography of the Siberian Newt (Salamandrella keyserlingii Dybowski, 1870)*

Individuals interested in obtaining a copy of one of these publications can contact Dr. George Zug at the Smithsonian. UtAH has a copy of each of these papers as well as many previous papers published by the Smithsonian Herpetological Information Service. Anyone wishing to find out more about this series or to examine some of the papers may arrange to do so by contacting Breck Bartholomew.

► The Natural History Museum at the University of Kansas recently announced "The Peruvian Field Guide Series" with the first

publication in the series, *Guide to Frogs of the Iquitos Region, Amazonian Peru* by Lily O. Rodríguez and William E. Duellman. This guide includes: guide to the identification of 112 species of frogs in the upper Amazon Basin; 121 color photographs of 111 species; and information of natural history and behavior of adults and larvae.

The books is available for \$19.95 + \$1.50 s/h from the Natural History Museum, Publications, Dyche Hall, Lawrence, KS, 66045-2454, USA, or for \$17.95 (UtAH members) from Bibliomania.

► Russ Gurley and Living Art recently published the book *A Color Guide to Tarantulas of the World I* and are about to publish the second book in the series, *A Color Guide to Tarantulas of the World II*. Both books are in full color. For more information and to order write Russ Gurley, Living Art, P.O. Box 2211, Ada, OK 74821.

Russ Gurley was kind enough to send us a copy of the first book to review. If anyone would like to borrow the book and review it for the next issue of *Intermontanus*, please contact Breck Bartholomew.

► *Herp Quest* is a new bimonthly newsletter which strives to contribute to the protection of the world's amphibians and reptiles via a threefold approach:

1. Promoting Eco-tourism - Giving a marketable value to the preservation of species and their native habitat.
2. Locating Volunteers - Providing a consistent means by which researchers and organizations throughout the world can seek out qualified volunteers to assist in ecologically oriented projects, allowing all of us the opportunity to contribute.
3. Education - Organizing tours and events that allow people with common interests to come together for learning and an exchange of knowledge.

Subscriptions are \$17.95 per year US and \$24.95 outside the US. For more information contact *Herp Quest* International, 326 N. Indiana Ave., Vista, CA 92084, USA.

► *Serpent's Tale* announced a new book by John Levell entitled *A "Field Guide" to Reptiles and the Law*. This new book contains an up-to-date, comprehensive listing of laws, rules and regulations by the Federal Government and all 50 states regarding both reptiles and amphibians. The author went straight to the actual laws and codes; this is not just a reprint of the various wildlife resources proclamations. The book includes:

- CITES and the US Endangered Species Act explained
- 50 State listings of endangered, threatened and protected species
- 50 State listings of collecting and possession regulations and rules regarding exotic species, permit application procedures and more

The book should be available in late May or early June. 240 pages, softcover \$29.95. Available from *Serpent's Tale*. Bibliomania will also be carrying this book with a 10% discount for UtAH members.

RESEARCH UPDATE

STRIPED WHIPSNAKE STUDY

A recent study by Camper and Dixon examined morphological characteristics of 1633 *Masticophis taeniatus* and 355 *Masticophis bilineatus* from throughout their ranges. In addition, they completed an allozyme study of 36 specimens of whipsnakes. Their extensive study yields some interesting geographic patterns which will be of value to any student of western herpetogeography. Numerous snakes from Utah were examined and they were grouped into three geographic regions (Great Basin, Colorado Plateau, and Arizona Strip). The relationships of these three groups to other groups provide for some interesting hypotheses as to the biogeography of these snakes in the intermountain region. The paper's citation and abstract are:

Jeffrey D. Camper and James R. Dixon. 1994. Geographic variation and systematics of the striped whipsnakes (*Masticophis taeniatus* complex; Reptilia: Serpentes: Colubridae). *Annals of Carnegie Museum*. 63(1):1-48.

Utah Association of Herpetologists

Intermontanus

Editor: Breck Bartholomew

Assistant Editor: Cynthia Lleyson

Copy Editors

Stan Draper

David Webb

Education Committee Chair: David Webb

Membership: \$8.00/year; includes six issues of *Intermontanus*

Send correspondence to: UtAH,

195 West 200 North,

Logan UT 84321-3905

(801) 752-0297

e-mail: Utahherps@aol.com

Everyone is invited to contribute to *Intermontanus*. Articles, notes, essays, book reviews, and other submissions should be type written or on computer disk (Macintosh or PC). However, hand written articles will be accepted from individuals who do not have access to computers or typewriters.

Advertisements

Ad Size	Cost
Classified ad:	\$2.00 (members free)
1/8 page:	\$5.00
1/4 page:	\$8.00
1/2 page:	\$12.00
Full page:	\$19.00

© Copyright 1995 Utah Association of Herpetologists. Unless otherwise stated, original articles, notes, etc. published in *Intermontanus* may be reprinted provided: They are not altered; they are properly cited; and the Utah Association of Herpetologists is sent a copy of the publication in which it appears.

Abstract—Geographic variation in morphological and protein characters in *Masticophis taeniatus* sensu lato and *Masticophis bilineatus* were investigated. Populations of striped whipsnakes in southern Texas and eastern Mexico allocated to *M. t. schotti*, *M. t. ruthveni*, and *M. t. australis* are not conspecific with those of *M. t. taeniatus* and *M. t. girardi* of the western United States and Mexico. The southeastern populations are elevated to specific status and referred to *Masticophis schotti*, whereas the western whipsnake populations remain *M. taeniatus*. Striped whipsnake populations in south-central Mexico allocated to *M. t. australis* are not separable from those making up *M. t. ruthveni* and the two taxa are synonymized. *Masticophis schotti* and *M. taeniatus* differ from one another in maxillary tooth number, preanal dorsal scale row frequency, number of apical scale pits, and color pattern. An allelic difference across the Balcones Escarpment of central Texas at the supernatant amino acid transferase (*S-Aat-A*) locus exists between *M. t. girardi* and *M. s. schotti*. *Masticophis bilineatus* shows little geographic variation. A phylogenetic analysis of geographic samples supports the monophyly of both *M. taeniatus* and *M. schotti*.

THE TAXONOMIC STATUS OF UTAH'S GREAT PLAINS RAT SNAKE

After decades with virtually nothing written about the Utah/Colorado population of Great Plains rat snake, two recent papers discuss their taxonomic status in relation to other *Elaphe guttata*. The first paper by Weir (1993) is specifically about the Utah/Colorado population. Weir examined 48 specimens and concluded they should be recognized as a distinct subspecies, *E. g. intermontana*. The second paper, Smith et al. (1994), is primarily about populations in Texas, but *E. g. intermontana* is briefly discussed. Smith et al. conclude "To the authors' surprise, it was found that the separation envisioned by the Woodburys (1942) and reiterated by Weir (1993) was basically sound..."

The citations and abstract (or introduction) for the two papers are presented below:

Weir, John. 1993. The taxonomic status of *Elaphe guttata intermontana* - The Intermountain Ratsnake (Woodbury & Woodbury, 1942). Herpetile. 18(4):167-179.

Introduction—The Intermountain rat snake, or Western Plains rat snake, *Elaphe laetus intermontanus*, was originally taxonomically classified and described by Woodbury & Woodbury (1942). The stimulus for the initial investigations was based on the discovery of several unique specimens of the Great Plains rat snake, *Elaphe laetus laetus* (= *E. guttata emoryi*), to the west of the Rocky Mountains, U.S.A. This extension of its known range proved to be highly significant. Upon closer examination the specimens taken from the Colorado Basin were found to have a number of important morphological differences from those specimens found to the east of the Rocky Mountains.

Since that date the taxonomic status of *E. g. intermontana* has, to say the least, remained chaotic. In 1992 the author received several specimens of this form from Colorado and these have proved to be the catalyst for the discussion and research upon which this article is based.

Dowling (1952) synonymized the taxon *E. g. intermontana* under *E. g. emoryi*, and this situation has generally remained until the present day. *E. g. intermontana* has obvious similarities with the closely related *E. g. emoryi* but also differs in a number of specific characters which in my opinion describe a distinct form, deserving further detailed study. It would be convenient to support the resurrection of full subspecific status for this isolated population - *E. g. intermontana*, but my observations are based on the close study of a relatively small sample of specimens (N=48), and the in-depth study of a limited number of papers and articles.

Specimens of *E. g. emoryi* found in west Texas closely approach *E. g. intermontana* although not exactly, I have noted this relationship

in my findings.

Smith, Hobart, David Chiszar, James R. Staley II, and Kamuran Tepedelen. 1994. Populational relationships in the corn snake *Elaphe guttata* (Reptilia: Serpentes). Texas Journal of Science. 46(3):259-292.

Abstract—A southeastern subspecies, *Elaphe guttata meahllmorum* subsp. nov., is distinct from a northwestern subspecies, *E. g. emoryi*, on the basis of having fewer dorsal blotches on the body (44.5 or fewer, 100%, vs 45 or more, 98%, respectively), as well as less distinct differences in ventrals, caudals and ventral pattern. The former agrees with *E. g. guttata* in number of dorsal blotches on body, differing primarily in color from it (gray or brown vs reddish, respectively). *E. g. emoryi* agrees with *E. g. meahllmorum* in color, but differs from both of the other subspecies in having numerous blotches. The eastern, nominotypical subspecies appears to be dichopatric relative to the other subspecies, but if a contact occurs it is with *E. g. meahllmorum*, not with *E. g. emoryi*. The latter two subspecies have parapatric ranges and presumably intergrade, although conclusive evidence is lacking. One nominal species, *Coluber maculatus* Bonnaterre (1790), commonly referred the synonymy of *E. g. guttata*, was found to be based partly also on *Lampropeltis c. calligaster* (Harlan, 1827). Since no type had previously been specified for *C. maculatus*, a lectotype is designated that maintains the current allocation of the name, thus avoiding replacement of Harlan's name were the *Lampropeltis* selected as lectotype.

HEADLINE HERPS by David Webb

Introduction Of The Brown Tree Snake Causing Problems

Efforts are being made on Guam to control the brown tree snake (*Boiga irregularis*) and to prevent the species from spreading to other Pacific Islands by air and sea cargo shipments. U.S. agencies, including the U.S. Fish & Wildlife Service and the departments of Defense and Agriculture, along with OTIA, Guam and other insular area governments, have been engaged in a five-year program to develop control technologies for dealing with the snake.

On January 30, Dr. Tom Fritts of the National Biological Service briefed the leaders of Guam, Hawaii, and the Northern Mariana Islands on progress being made to control the snakes. The infestation on Guam by the brown tree snake has caused significant ecological and power utility damage over the past two decades. [People, Land & Water, March 1995 (23). Submitted & summarized by Hal Whitlock]

Philippines Officials Working To Save Crocs

The government-run Crocodile Farming Institute has been working since 1987 to change the image of the only survivor of the dinosaur age and preserve the two species of crocodiles native to the Philippines. The saltwater crocodile and the smaller, rarer Philippine crocodile are both endangered in the Philippines. The institute's goal is to develop techniques for breeding and rearing crocodiles in captivity so that farmers can produce hides for bags, shoes, and other consumer products, and meat, a gourmet delicacy. It also wants to return the crocodiles to their natural habitats in the wild. The institute, located on Palawan Island southwest of Manila, is home to about 2,540 crocodiles, 80 percent of whom [sic] were hatched in captivity. Officials are currently attempting to identify remote areas on the islands of Palawan and Mindanao to declare crocodile preserves and then release the animals into the wild. [Deseret News, Saturday, April 15, 1995]

Didn't They Search Him?!

A suspect arrested for driving with a falsified and suspended license had a boa constrictor hidden in his underwear. The 1 1/2 foot snake crawled out while the suspect, Brian Dawson, was changing

into a jail uniform. He told officers in the Cleveland suburb of Brooklyn Heights that the snake was his pet and he was trying to keep it warm. However, pet store owner Peggy Alison, who saw TV reports about the boa, claims it's the same snake that disappeared from her store the same day Dawson was arrested. Dawson's girlfriend claimed the snake that day. [Deseret News, Thurs/Fri, April 13-14, 1995]

Bean Opens New Herp Exhibit

A new collection, "Amphibians and Reptiles of Utah," is now on display at the Monte L. Bean Life Science Museum of Brigham Young University. Admission is free, and the museum is open Monday through Friday from 10 a.m. to 9 p.m. and Saturday from 10 a.m. to 5 p.m. For information or to schedule tours a week in advance, call 378-5051. The new W.W. Tanner Synoptic Collection shows every species and subspecies of amphibians and reptiles identified in Utah. "No similar collection exists," said Doug Cox, assistant director of the museum. "Now teachers can bring their students to the museum and say, 'Here are all the amphibians in the state.' It's purely educational. It's more than just an aesthetic exhibit." [Deseret News, Tues/Wed, March 28-29, 1995]

No More Noah's Ark

Richmond, Texas school officials have ordered all classroom pets, except fish, out of Jane Long Elementary by Friday. There is one snake among the many animals given the boot. The ban could become district-wide. Officials cite health reasons. [USA Today, Thursday, March 30, 1995]

Rattlesnakes Go To Church

The worship service at the Church of the Lord Jesus is just beginning. Then Carl Porter, pastor of this small Pentecostal Holiness church in Appalachia, about 70 miles north of Atlanta, casually pulls out a deadly 5-foot rattlesnake and holds it inches from his face. Does this sound like the beginning to a horror movie? It's real and takes place every week in Appalachian states. Handling venomous snakes isn't some spectacular stunt to Porter and others here, it's a solemn commandment from God and an act of obedience for Christians. Despite its danger, despite decades of ridicule, members of scattered Appalachian churches unashamedly cling to snake handling. They base it on a controversial passage in Mark 16, which says believers "shall take up serpents." Since the practice began in 1910, 74 people have died from snake bites. About 2,000 to 2,500 people in Appalachian states handle snakes, said David Kinbrough, a religious scholar and expert on the subject. Part of the mystery and mystique of snake handling is that people are rarely bitten, considering how often they hold snakes. [The Salt Lake Tribune, Sunday, March 12, 1995. Submitted by Breck Bartholomew]

Wayward Tortoises Need Your Help

Officials are asking for the public's help with any Mojave desert tortoises that get themselves in precarious spots as they come out of hibernation. About a half dozen members of the threatened species turn up in town [St. George] every spring, said John Schijf, Utah Division of Wildlife Resources (DWR) conservation officer. Tortoises have started emerging for the first time since November, although Schijf said most will be ending hibernation over the next few weeks. "They'll just show up in people yards," Schijf said. Residents should not return wayward tortoises to the desert because they likely have escaped after being kept illegally as pets, Schijf said. He said officials believe captivity often erodes a tortoise's survival skills and creates stress that leads to a fatal respiratory disease. Instead, residents are asked to put them in a cardboard box away from the sun and call either DWR or the Washington County Sheriff's office. Tortoises should not be touched in the wild, Schijf said. However, residents who find a tortoise in a road are asked to carry the tortoise to the

roadside in the direction it was moving, Schijf said. Anyone with a pet tortoise will not be prosecuted if they voluntarily turn it over to officials, Schijf said. [The Spectrum, St. George, Utah, Wednesday, April 5, 1995]

Snake's Alive!

The recent nice weather in Arizona has woken up its resident rattlesnakes. The snakes, however, received a surprise in the form of many new neighbors. While the serpents were hibernating, people were busy building new homes around the snakes' homes. Residents in new housing developments in the Phoenix metropolitan area have put in 120 calls for snake removal in the past few days. [Deseret News, Thurs/Fri, March 23-24, 1995]

BLM Wants Your Comments

The U.S. Bureau of Land Management (BLM) Arizona Strip District will be taking public comment until May 5 on a proposal for management of its land occupied by the Mojave desert tortoise. Officials are considering protecting the threatened species with restrictions on recreation, mineral extraction and other land uses, although grazing cutbacks cause the most controversy, said George Cropper, manager of the Shivwits Resource Area. The resource area will release a list of alternatives in late May and make a decision in August, Cropper said. Anyone who takes part in the input process can file a protest afterward, Cropper said. More information is available from the resource area, 345 Riverside Drive, St George. [The Spectrum, Wednesday, April 5, 1995]

Innocent Salamander Unjustly Accused

Despite the accusations of flooded farmers, efforts to protect the endangered long-toed salamander had nothing to do with the recent overflow of the Pajaro River. No rare salamanders or any other endangered species have ever been found in the Pajaro or Salinas rivers, contrary to news reports that appeared from coast to coast, and the state's Endangered Species Act did not prevent routine clearing of the Pajaro River channel. Even state officials admit that Governor Wilson's suspension of the act last weekend would not have any effect on cleanup of the flooded areas. In the days following last week's flood, which focused national attention on the inundation of the town of Pajaro and thousands of acres of farmland, farmers and business owners complained that river maintenance had been neglected by "salamander-kissing," environmentalist politicians reluctant to disturb the creatures' habitat. "We know that Pajaro...was sacrificed for the tree huggers and environmentalists," said Pajaro-area strawberry grower Clint Miller. Days later, Wilson stood on the banks of the Salinas River and suspended the state Endangered Species Act, describing it as an obstacle to disaster recovery. He also demanded that President Clinton suspend the federal Endangered Species Act in California. [San Francisco Chronicle, Friday, March 24, 1995]

In Summary

A lot of these articles are very long and therefore are shortened or summarized. If you would like a copy of the original article, you can write to me in care of UtAH or call me at 801-224-4001 anytime (I have an answering machine and turn off the ringer when I'm asleep). I will photocopy as many articles as you want that will fit in a #10 envelope for \$1 (to cover my costs). Or I can bring them to the next meeting.

CURIOSITY CORNER

By Stan Draper

This is the first of what I hope to be a continuing column about the care of our captive friends. Hopefully, if you have a question about your animals; be they reptile, amphibian, arachnid, bird, fish or mammal, you will drop a line to UtAH. Breck will forward it to me and we will get an answer back to you. If the answer is needed quickly, Breck or I will call you with the answer and still print it later in a newsletter for others to benefit. Any and all questions are welcome. Remember, the only stupid question is the one unasked!!!

One of the most often asked questions is "Do you think my child is old enough for a snake or an iguana and what kind do I get them?"

This is a tough question in the first place because I generally don't know the child in question. The parent(s) have to make this determination, taking into consideration how much responsibility the child is capable of and whether the parent(s) will be willing and able to help when needed or take over when illness, camp or other activity makes the child incapable of performing the care duties.

If the determination is made that the young person is ready for this type of "pet", the next question is what kind? This can also be tricky. Of course it is better to start with a beginner's animal. But first things first, if nobody in the family has on hands experience with reptiles, the first thing to buy is a book on husbandry of the animal. This is much easier now than it was when I first started keeping reptiles. At the very least, buy the book at the same time as the animal. Believe me, this small investment (\$5-\$10) will pay off in the long run.

Now for the animal, in my opinion, the very best is a red rat or corn snake, *Elaphe g. guttata*. With a plethora of color morphs and varieties, it is easy to find one that appeals to the young person's eye. The general disposition of this species is very calm when handled carefully and frequently. For young beginners, I would recommend an animal at least 18 mo. to 2 yr. old. Newborns and young juveniles can be a little harder to keep fed with proper sized meals.

If a lizard is more the animal of choice, then I don't believe you can go wrong with a leopard gecko, *Eublepharis macularius*. These guys are very hardy and forgiving when conditions are not kept at optimum.

In the area of turtles and tortoises, I could not recommend any species higher than the Russian tortoise, *Testudo horsfieldi*. Very hardy and a captivating personality make these guys an excellent first animal. Low maintenance and an easy diet also are great selling points.

My definite negative animals for very young beginners and even some older ones are any of the monitors, boas and pythons over four feet total adult length, box turtles, green iguanas and usually any animal over \$100.00 pet store price.

There is plenty of room for discussion on this subject and I am more than willing to debate it with anyone at anytime. Please feel free to write and express yourself.

AMPHIBIAN COUNT

This year's amphibian count met with mixed success. I arrived in Zion about 9:00 pm Thursday night. Randy Wilbert was already there and we waited for a while to see if anyone else would show up. At 10:30 we headed for Oak Creek Canyon to learn to identify the amphibians by both call and site.

In Oak Creek there were several red-spotted toads (*Bufo punctatus*) calling as well as some southwestern toads (*Bufo microscaphus*) and canyon tree frogs (*Hyla arenicolor*). We were able to find eggs for the two toads and some *B. microscaphus* tadpoles. Compared to the last couple of years, there were far fewer egg masses and tadpoles, but

the amphibians seemed to be out in full force. After looking around for a bit we went back to camp for the night.

When we woke up we found that two more UtAH members, James Freasier and Dean Leavitt, had joined us in the night. The morning started out fine, but by 8:00 am it had started to rain, then hail. Cold and wet we headed back to Oak Creek Canyon to show the new comers the amphibians and their eggs. We were able to find both species of toad under rocks and logs near the stream. We also found the only side-blotched lizard (*Uta stansburiana*) we were to see on the trip. From Oak Creek we headed up to the East side of Zion and into the slick-rock.

In the pot-holes we found several *Hyla arenicolor* adults and some eggs. We also found some Great Basin spadefoot (*Scaphiopus* (*Spea*) *intermontanus*) adults in amplexus, tadpoles, and eggs. The rain continued and we did not find any more reptiles. In the afternoon we went to the Fedorchak's house (both Rich & Sheri are park employees and have been very supportive of UtAH and efforts to learn more about the herpetofauna of the park) to photograph a couple of southwestern blackhead snakes (*Tantilla hobartsmithi*) that were found earlier in the week (not in Zion).

Later, while we were at camp eating dinner Hal Whitlock showed up ready to go herpin'. At about 9:00 pm we headed back up to Oak Creek for the first survey. The air temperature was 8°C, and the rain had stopped. The creek was much higher than the previous night and it was full of silt. The water temperature was 10°C. Unlike Thursday night, no amphibians were calling. In fact, only *B. microscaphus* were out at all. In 1 1/2 hours we were only able to find 30 toads which included 5 pairs in amplexus. We did find two egg masses, one was in a side pool where all the tadpoles were stranded and destined to die, and the other was only a piece of an egg mass. I assume the small number of egg masses and tadpoles that we saw in Zion were a result of the many floods this spring rather than a lack of breeding. As for the absence of *B. punctatus* and *H. arenicolor* I can only guess. I know *B. microscaphus* normally breeds earlier in the year, thus presumably when the temperature is lower. Perhaps Friday night was just too cold for the other two species?

Saturday started out looking much better than Friday. And in fact it ended up raining less than the day before. In the morning we met up with Russell Bezette and gained access to some private property next to the Virgin River. The area had a lot of boards and rocks to turn and we started at it diligently. This area turned out to be quite productive, yielding four *T. hobartsmithi*, and one each of the following species: Ground snake (*Sonora semiannulata*), Great Basin rattlesnake (*Crotalus viridis lutosus*), Utah banded gecko (*Coleonyx variegatus*), desert spiny lizard (*Sceloporus magister uniformis*), and Great Basin whiptail (*Cnemidophorus tigris*). A couple of the animals were photographed and released.

Back in Zion we were escorted up the Main Canyon which was closed due to a recent landslide. It was nice to see the canyon empty of people. In the Main Canyon we were able to see two or three Northern leopard frogs (*Rana pipiens*). These frogs used to be very common in Zion, but today they are a rare find. On the way out of

For turtle and tortoise keepers, by turtle and tortoise keepers, *The Bridge* shares practical, hands-on information from people who've successfully dealt with the health and habitat problems of captive chelonians, with occasional forays into other species of Reptilia as well. Published quarterly in March, June, September and December, *The Bridge* is available in a newsletter format either by subscription or on an issue-by-issue basis. Subscriptions are \$14/year. Individual issues are \$3.50 each (please specify which issue(s) you would like to receive: M, J, S, or D).

The Bridge

160 North Fairview Avenue, Ste. D-231
Goleta, CA 93117

the Main canyon we stopped to turn things, but we didn't find anything. So we headed to camp where we saw an Eastern fence lizard (*Sceloporus undulatus*). Dean and James found a couple more of these in the park during the trip, but I can't remember where or when. Later we headed back to Oak Creek for another survey.

The creek was still high and no amphibians were calling so we decided to survey the slick-rock canyons we had visited Thursday. It was obvious that water had recently been flowing in the canyons, but the eggs and tadpoles seemed to fair better in the potholes. Again no frogs were calling and we were only able to locate two *S. intermontanus*. We did find eggs and tadpoles in some of the potholes. The temperatures for the air and water were nearly the same as Thursday and I suppose the cold could have limited the *H. arenicolor* activity. With all the rain it was surprising that we didn't find more spadefoots. Perhaps they are not very cold tolerant either. At the end of one canyon we were able to hear a single spadefoot calling, but we couldn't get to it.

Sunday morning looked like the day would be very nice. The sun was out and it was warming up. Unfortunately we all had to return home and the camp was emptied fairly early.

Despite the cold and wet weather, I believe we all had a good time. As far as I know we are planning to continue our efforts in Zion next year in late April or early June.

Breck Bartholomew

HUSBANDRY & HERPETOCULTURE

ALTERNATIVE FOODS FOR REPTILES AND AMPHIBIANS

by Donald Smee, Utah State University, Logan

The pet industry has made significant advances in providing live and dead food for reptiles and amphibians since I became active in keeping these animals over 30 years ago. Back then one often had to be resourceful or clever to get specimens through the winter when outdoor food sources ceased to exist. Even today, some of the smaller towns in Utah may not have pet shops nearby which supply the kind of live food needed for a particular species. Or such food purchased over the long term may not be economical. In response to these challenges, the herp keeper may find that their animals will eat certain "grocery store" foods that can be kept in one's own refrigerator. This article describes some of the experiences that I have had in getting herps to eat these alternative foods, with suggestions given on where to buy some live foods at reasonable costs.

My first experiment with alternative feeding came in the 1960s when I purchased a Tokay gecko (*Gekko gecko*). On a weekly basis I went out into fields in the summertime and collected large grasshoppers to feed it. When winter approached the grasshoppers died off and then the dilemma came. What was I going to feed the lizard? Why not try feeding it pieces of lean meat? When the animal was grasped securely by the neck, it gaped its mouth wide open (I think that all Tokay geckos do this). A piece of beef liver was plopped in, the animal was returned to its cage, and it ate the meat. This feeding technique helped sustain the gecko through the winter until the next season when insects returned to the outdoors.

I had a large congo eel (*Amphiuma means*) that ate about 60 earthworms each week. When winter came and the ground froze, the food supply was cut off. I did not know what to feed it. I had a marbled salamander (*Ambystoma opacum*) die and when I put the dead salamander into the tank with the congo eel, the prey was devoured immediately. The eel was really starving and eventually died. At the time I was not smart enough to know that the eel would have greedily consumed lean meat such as beef liver or heart. Although earthworms can be purchased all year long now, one can save money by feeding congo eels and sirens (*Siren intermedia* or

Siren lacertina) a weekly diet of beef heart and worms.

Now I prefer beef heart to liver, as do other hobbyists and scientists. Studies suggest that because beef liver is a processing organ for toxins, the liver contains substances deleterious to the health of herps when fed over several months or years. Beef heart must be defatted in order to be healthy. I use beef kidney on a sporadic basis as food for herps, avoiding it for some of the same reasons that beef liver is avoided.

Beef heart can be fed to many species of salamanders and newts, those species that normally will eat worms. The meat is cut into wormlike strips (it cuts best when frozen) and then wiggled in front of the animal. Turtles often will eat beef heart as well as will certain anurans such as African clawed frogs (*Xenopus laevis*) and fire bellied toads (*Bombina orientalis*). One has only to experiment with each species to see what they will eat. The animals may be more ready to accept such food when they are hungry.

Roy Pinney (1991) reported that garter snakes (*Thamnophis* spp.) will eat strips of lean meat. I would imagine that water snakes (*Nerodia* spp.) will eat pieces of beef heart that are rubbed with fish. I once fed a pinky mouse that had been rubbed with a dead fish to a water snake. These snakes are greatly attracted by the scent of fish and will even try eating fingers that have fish scent on them. Presently I have a green anole (*Anolis carolinensis*) that occasionally eats a piece of beef heart from forceps. Larval salamanders prefer beef kidney to beef heart. The kidney is softer in texture and more pliable, probably feeling more like natural food. There is a report indicating that brown tree snakes (*Boiga irregularis*) on the island of Guam ate balls of hamburger offered to them (Jaffe 1994) (this meat is too fatty and should be avoided). Thus, there are a variety of species that can be induced to eat alternative foods.

Even though lean beef is cost-effective and convenient, it should not be used as a sole food source. The salamanders and newts that I maintain get both beef heart and earthworms on a weekly basis. Some specimens also get an occasional cricket (a certain amount of insects may be important to promote good health).

Where can one go to find natural foods (worms, bugs, etc.) at prices more affordable than what pet stores charge? Try your local sporting goods store. The sporting goods store in my town sells earthworms, mealworms, wax worms and other grubs at a reasonable cost. Purchasing earthworms is particularly important for my collection during the winter time.

In the last few years I have experimented with maintaining earthworms indoors during the winter, particularly small ones that cannot be purchased at the store. Worms can usually be obtained in large numbers at night during fall rains. Rather than keeping them in dirt which hasn't worked too well, I keep them in layers of wet moss ("Green Moss" sold at Ernst). About 50-100 worms can be kept in a Rubbermaid-type shoe box container that has small holes bored in the lid. Instead of buying special and costly worm food, I crush up dry dog food and put it in the bottom of the containers to feed the worms. It is very important to rinse out the containers at least every other week to remove toxic wastes that build up. The worms will breed and produce small micro-size worms that can be used to feed baby salamander larvae.

As an alternative to buying lots of goldfish to feed water snakes and turtles, you may want to buy smelt from a grocery store. I once had an alligator snapping turtle (*Macrolemys temminckii*) that ate smelt injected with vitamins each week.

I have no alternative food suggestions for rodent eating snakes, except for the above mentioned brown tree snake. Find a cheap source of frozen rodents and hope that members of your household will not object to them being kept in the freezer.

I have an aversion to keeping herps that only eat other herps, such as lizard-eating snakes or frog-eating species. There is a success story of changing a snake's diet away from frogs. Two years ago I visited a research institute in Estonia that had a colony of common

European vipers (*Vipera berus*). These snakes are disappearing from nature primarily because the frogs they eat are vanishing. The institute has had success breeding the vipers in captivity, but frogs were becoming increasingly hard to collect. So they started experimenting with feeding fish to the baby snakes. The first meal that the newborn snakes received was frog parts, followed later by a strip of fish rubbed in frog parts, then later only fish. I watched as the now-adult snakes gobbled down pieces of fish that were laid on a plate set in their cage. The snakes were attracted by the scent of the fish and came from all corners of the cage to eat. Thus, in this instance it was possible to train young snakes to eat something different than what they naturally would.

In all of the above discussion, the animals ate willingly with perhaps the exception of the Tokay gecko that was under some stress in being handled (the lizard could have regurgitated the meat if it had wanted to), but no force feeding was done. If animals refuse to eat alternative foods, then foods they will eat must be provided or else the animals will die. Also, as indicated earlier for maintaining the proper health of one's pet, it is important that alternative foods such as beef heart are not the sole food source. But one can surely save money and possibly time by incorporating these types of food into the diets of reptiles and amphibians where possible.

Literature Cited

- PINNEY, ROY. 1991. Garter snakes. Reptile and Amphibian Magazine. 1991(Sept./Oct.):11-19.
 JAFFE, MARK. 1994. And No Birds Sing. Simon & Schuster, New York. 283 pp.

BOOK REVIEWS

PYTHONS OF THE WORLD VOL. 1, AUSTRALIA

By David G. & Tracy M. Barker

It is very pleasing to see the wealth of herpetological oriented publications hitting the market nowadays. As with any other field the range of quality unfortunately goes from toilet paper to museum specimen. I must give my thanks to the Barkers and the Herpetological Library for producing the first of a series of books in the upper 25% of my quality range.

The layout of the text is very nice. Each subspecies account is accompanied by line drawings of the head and a small range map. The species accounts are chock full of as up-to-date as possible information including size, sex determination, body and egg descriptions and comments about different topics pertinent to that particular species or subspecies.

Some of the work for the species accounts comes from museum specimens and the authors must be commended for their efforts in visiting Australia and putting in the time to photograph and get detailed descriptions of the less known animals. Also because of Australia's propensity for over protecting their wildlife, the information on a few of the species is very lacking in quantity. Thanks must also go to the few Australians, lucky enough to be able to work with the lesser known species, for sharing what data they did have with the Barkers.

There is a good collection of color photographs in the center of the book contributed by various people with the majority by David Barker by virtue of having one of the largest collections of living specimens. Where possible, there are several showing variance between localities. Not a major thing but, had I done the book, I would have placed one color photo near the species account to give the reader an idea about the animal without having to flip back and forth. As pointed out in the introduction, this is not intended to be a taxonomic reference on the Australian pythons. The authors have mainly stuck to the existing literature and proper nomenclature. I am sure that in the very near future with more academic work done on this group of animals there will be a few changes made in the area

of subspecies especially. We have already seen recently a change with *Chondropython* changed to its proper *Morelia* grouping.

The various parts of the appendix are very useful as is the well rounded bibliography. Taken all together this first volume by the Barkers is a must have for python people. Personal copies of this book will be well worn very quickly by herpetoculturists who have or will have specimens of Australian pythons. I am looking forward to the subsequent issues of this series!!

Stan Draper
 Salt Lake City, Utah

ANIMALS STOLEN

On Sunday, April 30, 1995, at approximately 5:15 P.M., my 1989 GMC van (Dark green GMC Explorer) was stolen in Cleveland, Ohio following the Cleveland Swap meet.

The following is a partial list of animals that were in the van when it was stolen. If you are offered any of these animals, I would appreciate it if you would obtain as much information about the possible sellers as you can and let me know.

Thank you for any help and cooperation.

Don Hamper, 1215 Fishingier, Columbus, OH 43221, (614) 457-4433 or (614) 459-4261 (FAX)

Missing Animals: 2.1 Womas - CB '94, Approximately 2', 23 Baby boas, 1.2 Dumeril's boas - Approximately 4-5', 3 Adult blue tongue skinks, 1.0 Ridge-tailed monitor - Adult, 1.1 Mata mata turtles - 4-5", 1.1 Leucistic Texas rat snakes - 2.5', 3 Adult bearded dragons, 10 Hatchling bearded dragons, 1.0 Adult high-yellow leopard gecko, 40 Hatchling leopard geckos 1 Boa constrictor - Approximately 4', 3 Columbian rainbow boas, and 26 Miscellaneous animals (frogs, rat snakes, milk snakes).

You may also contact Al Zulich, Harford Reptile Breeding Center, P.O. Box 914, Bel Air, MD 21014-0914, 410/838-1578 Phone/FAX, awzulich@cbdcom.apgea.army.mil

CLASSIFIED ADS

For Sale: Fire Salamanders (*Salamandra salamandra*) three, \$20.00 each. Spanish Newts (*Pleurodeles waltl*) two, \$15.00 each. Crested Newts (*Triturus cristatus*) three, \$10.00 each. Emperor Newt (*Tylototriton verrucosus*) one, \$20.00. Call Don Smea (801) 750-0284.

For Sale: Albino Burmese python (*Python molurus bivittatus*). Beautiful Female, 7' long. With Oak & Brass terrarium 49" x 25" x 25", plate glass front, top door, slide lock, heat rock, and light \$575 obo. Will consider selling separately, on condition. Contact Stan Johnson (801) 571-3180.

For Sale: Female *Lampropeltis triangulum sinaloae* yearling, feeding on pinkies, \$65.00. Stan (801) 364-5009, leave message.

Free: *Pituophis melanoleucus deserticola* long-term captive. Stan (801) 364-5009, leave message.

AMERICAN FEDERATION OF HERPETOCULTURISTS. A nonprofit national membership organization of herpetoculturists, veterinarians, academicians, and zoo personnel involved in the captive husbandry and propagation of amphibians and reptiles. Membership includes the highly acclaimed *The Vivarium* magazine, dedicated to the dissemination of information on herpetocultural accomplishments, herpetological medicine, breeding & maintenance, field studies and adventures, enclosure design and much more. Membership in the AFH is \$26.00. Send information requests to, AFH-News, PO Box 300067, Escondido, CA 92030-0067.

Next Meeting: Thursday June 1, 1995 at 7:00 pm in room 212 of the University of Utah's Biology building. **Dr. Oscar Flores Villela** will present a talk entitled "**Biogeography and Conservation of Mexican Herpetofauna.**" Dr. Flores Villela is a member of the Facultad de Ciencias, Museo de Zoología, Universidad Nacional Autónoma México and has published numerous papers on Mexican herpetofauna. After the talk there will be a drawing for a copy of *The Monitor*, an Australian herp magazine. This month's raffle will be for a captive born Coastal Rosy Boa (*Lichanura trivirgata roseofusca*) donated by Breck Bartholomew. Tickets will cost \$1 each and you may purchase as many as you like.

Future Meetings:

6 July 1995 — Miriam Benabib

26 July 1995 — Dr. Dennis Bramble

26 September 1995 — Jane Perkins

November/December 1995 — Lara Carroll



Varanus griseus souvenir sheet from Kazakhstan

Utah Association of Herpetologists
195 West 200 North
Logan UT 84321-3905
USA